DEPARTMENT OF THE ARMY
UNITED STATES ARMY GARRISON, ALASKA

DRAFT
ENVIRONMENTAL ASSESSMENT

Installation Boundary Fencing, Fort Richardson, Alaska

July 2003

APPROVED BY:

Donna G. Boltz
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U.S. Army Garrison, Alaska

NOTICE OF AVAILABILITY AND PUBLIC COMMENT PERIOD

Army Regulation (AR) 200-2 [32 CFR Part 651], Environmental Analysis of Army Actions, Final Rule, March 2002, implements the National Environmental Policy Act of 1969. Chapter 5, AR 200-2 authorizes the preparation of a Finding of No Significant Impact (FNSI) after an Environmental Assessment (EA) review indicates that an Environmental Impact Statement (EIS) is not required.

ACTION: **Installation Boundary Fencing, Fort Richardson, Alaska**

ENVIRONMENTAL DOCUMENTS: An Environmental Assessment (EA) and a Finding of No Significant Impact (FNSI) have been prepared for the security fencing project. Copies of these documents are available upon request. Interested parties are invited to submit, in writing, any comments or objections they have concerning the proposed action. Comments received will be reviewed and relevant issues will be addressed and incorporated into a revised EA. If no comments are received during the public comment period, the original EA will become the final EA. The Public Comment Period begins on the first day upon publication of this notice in the local media and extends for 30 days.

SUPPLEMENTAL INFORMATION: An EA is prepared to determine the extent of environmental impacts of a proposed action and to decide whether or not these impacts are significant. If the proposed action may or will result in significant impacts, an EIS is prepared to provide additional information on the context, duration, and intensity of the impacts. If the EA shows that the proposed action will not result in significant impacts, a FNSI is prepared and the National Environmental Policy Act (NEPA) compliance is satisfied. A FNSI is a document that briefly presents the reasons why a proposed action will not have a significant effect on the quality of the environment. The FNSI documents the decision that an EIS is not required for NEPA compliance. A FNSI is complete when no comment period is necessary, a comment period was held but evidenced no significant public concern, or public concern resulted in reconsideration of the FNSI that was still considered appropriate upon re-examination. Copies of the EA are available upon request. Persons interested in obtaining further information are encouraged to contact Chuck Canterbury, Media Relations Officer, U.S. Army Alaska, Public Affairs Office, Fort Richardson, Alaska at (907) 384-2072.

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DRAFT FINDING OF NO SIGNIFICANT IMPACT
Installation Boundary Fencing, Fort Richardson, Alaska

Description of Action. U.S. Army Alaska proposes to construct new security fencing along the northeast boundary, the Glenn Highway Corridor, and the south and southwest boundary on the Fort Richardson Military Reservation. Perimeter security is important to protect the viability of training, integrity of improvements and facilities, to promote safety and to provide boundary demarcation. The decision to be made is which one of four alternatives to implement: No Action Alternative – do not install installation boundary fencing; Alternative 2 – combination security fencing; Alternative 3 – security fencing allowing animal passage; or Alternative 4 – security fencing allowing for expanded animal passage. Other alternatives were also considered but eliminated from detailed evaluation because the alternatives were cost prohibitive or otherwise infeasible. The total required length of the new security fencing is 33.8 miles. Funding may be a limiting factor on the total amount of fencing which can be built. A Request for Proposal is being prepared by the Seattle District, U.S. Army Corps of Engineers to go out to bid NLT 2003. Construction will be initiated in Fall 2003 and be completed in Summer 2004.

Discussion of Anticipated Environmental Effects of Installation Boundary Fencing at Fort Richardson, Alaska. Vegetation removal will occur within a 20-foot right-of-way along the Fort Richardson installation boundary to accommodate the proposed fence. The fence would be installed no more than 12 inches from the installation boundary line and vegetation would be cleared only to 20 feet on the inside of the fence line. Wetlands occur in numerous places along the fencing area. A U.S. Army Corps of Engineers Clean Water Act Section 404 wetland permit is not required for this project as long as the fencing is installed during the winter months when the ground is frozen. Surface soils will be slightly disturbed by construction equipment, but would remain intact to encourage regrowth of vegetation during the following growing season. Any ground disturbance conducted in wetlands when the ground is thawed could cause adverse impacts (rutting, vegetation removal, and alteration of hydrology). The potential for adverse soil erosion exists in areas with steep slopes (5 to 20%). These areas will be revegetated immediately to prevent disturbance. Fencing within the floodplains of Eagle River, Ship Creek and the North Fork of Campbell Creek will not impede or channelize flow.

Small and medium sized animal movements would be severely effected if a chain link mesh fence is installed to ground-level by preventing migrations needed for food, denning and rearing, and safe haven from predators. However, these adverse effects would be alleviated with the creation of openings in the bottom portion of the fence to allow for animal passage. Large animals, particularly moose and bear, could be affected by placement of the fencing along the Fort Richardson boundary by confining large numbers of moose in areas with inadequate food sources during the winter and spring. Disturbance to the normal migration of moose could result in more animals in residential areas creating a traffic and safety concern. To alleviate disturbance to moose, pipe rail fences would be installed in two major crossing areas.

Recreational access will be affected by the proposed action, but only in that unauthorized pedestrian and vehicular access will be reduced. Individuals would be required to use the Fort Richardson Main Gate and go through the official procedure of checking-in rather than entering at any point along the boundary. Recreational access to Fort Richardson would be limited or prohibited only when particular areas are in use for military training.

No hazardous waste or materials will be generated as a result of the proposed action. There is a potential for discovery of hazardous waste or materials and if found, would be disposed of or remediated according to compliance requirements. Short-term noise impacts would occur during construction, but none would be significant or long-term. Adjacent residences would be notified of construction activities. Potential negative impacts to air quality include small, temporary additions of carbon monoxide from construction activities. No historic properties would be affected by the proposed action or any of the alternatives.

Aesthetics of the new security fence will be more pronounced in areas where no fencing currently exists. Homeowner's property values could be negatively affected by the new security fence. However, painting of the fence to lessen its visual impacts along Muldoon and Eagle Glen subdivisions will be conducted.

Conclusions. In an attempt to balance the Army's defense responsibilities and land stewardship obligations, U.S. Army Alaska has chosen Alternative 3 – security fencing allowing animal passage as its preferred alternative. Based on a review of the information contained in this Environmental Assessment, in combination with proposed mitigation measures, U.S. Army Alaska determined that construction of the installation boundary fence at Fort Richardson is not a major federal action that would significantly affect the quality of the environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an Environmental Impact Statement for this Proposed Action is not required.

Point of Contact. Requests for further information or submittal of public comments may be made for 30 days after first publication date to: U.S. Army Alaska, ATTN: APVR-RPW-EV (Gardner), 730 Quartermaster Road, Fort Richardson, Alaska 99505-6500. For information concerning the fencing project, please contact Chuck Canterbury, USARAK Public Affairs at (907) 384-2072 or by e-mail at chuck.canterbury@richardson.army.mil.

Approved by:

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U.S. Army Garrison, Alaska

7 Aug 03
Date

DRAFT ENVIRONMENTAL ASSESSMENT
For
Installation Boundary Fencing
Fort Richardson, Alaska

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DRAFT ENVIRONMENTAL ASSESSMENT

For

INSTALLATION BOUNDARY FENCING, FORT RICHARDSON, ALASKA

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The United States Army, Alaska (USARAK) is proposing to install fencing to prevent unauthorized pedestrians and vehicular access to the Fort Richardson military reservation (Fort Richardson) from the military boundary and the Glenn Highway corridor. This proposed project involves improving and securing the most at risk parts of the installation boundary and the Glenn Highway Corridor that penetrate Fort Richardson by installing new fencing where none exists and by replacing existing fencing that has been damaged or fencing that is inadequate for security purposes. Secure gates will be installed at all vehicular access points in the new fencing leading onto Fort Richardson.

1.2 Purpose and Need for Action

The purpose of installing fencing along the Fort Richardson boundary and the Glenn Highway Corridor is to support the Command's overall anti-terrorism and force protection program. Present threat assessments indicate more emphasis is needed to insure that basic security measures are operational and sustainable. Perimeter security is an important component to the Command's strategy to protect the viability of training, integrity of improvements and facilities, and to promote safety. When considered along with existing installation security measures and capabilities, the proposed fencing will greatly enhance installation security and public safety by providing clearer boundary demarcation.

Priority boundaries to fence are: along the northeast boundary from near Beach Lake on Knik Arm south to Clunie Lake and Eagle River, along the Glenn Highway Corridor from Eagle River to Muldoon Interchange, and along the southwest and south boundary in the Muldoon area of east Anchorage. (See attached map). These boundaries presently subject the installation to easy penetration and unauthorized pedestrian and vehicular access. Funding is unavailable to fence the entire reservation boundary at this time.

If the fencing is not provided, the Command will unable to effectively provide the necessary increased level of force protection and overall installation perimeter security. In addition, installation perimeter security would support the proposed Transformation of the 172nd Separate Infantry Brigade into a Stryker Brigade Combat Team, a decision currently pending the completion of separate environmental documentation. If the

fencing project is not implemented, the installation will remain more vulnerable to unauthorized intrusion (either intentional or unintentional) and the associated public safety risks, requiring USARAK to institute intensive surveillance and law enforcement actions.

1.3 Scope of Environmental Analysis and Decision to Be Made

This environmental assessment considers direct, indirect, and cumulative effects of the Proposed Action and alternatives, including the No Action Alternative. It was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 [42 USC 4321 *et seq*.], Council on Environmental Quality Regulations [40 CFR Parts 1500-1508], and the *Final Rule Environmental Effects of Army Actions* [32 CFR Part 651 Fed. Reg. 29 Mar 02 (67FR15289-15332)]. A specific requirement for this environmental assessment is an appraisal of impacts of the proposed fencing project, including a determination of whether or not a Finding of No Significant Impact is appropriate or whether a Notice of Intent to prepare an Environmental Impact Statement is required.

The decision to be made is whether to implement the Proposed Action, modify the Proposed Action, or select an alternative action, including the No Action Alternative. The Commander, U.S. Army Garrison Alaska will make this decision.

This fencing project is included as a future potential project in the Fort Richardson Physical Security Plan. All physical security measures including anti-terrorism and force protection are included in that plan. An economic analysis has also been prepared and was utilized in evaluating this project. This project is the most cost effective method to satisfy security and anti-terrorism requirements.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the Location and General Description of the Area, the Proposed Action (Installation Boundary and Glenn Highway Corridor Security Fencing, Fort Richardson, Alaska), alternatives considered in this assessment, and alternatives that were eliminated from further consideration.

2.1 Locations and General Description of the Area

The Fort Richardson Military Reservation is located in South-central Alaska, approximately seven miles northeast of downtown Anchorage. Fort Richardson's land mass is rectangular in shape with the long axis oriented north and south. It encompasses approximately 62,000 acres with about two thirds of the area on the coastal plain and the other one third on the western slopes of the Chugach Mountains. The Main Gate onto the Fort Richardson Reservation is along the Glenn Highway seven miles northeast of downtown Anchorage.

Fort Richardson is in a transitional climate zone between the sub arctic or continental in interior Alaska and the maritime along the southern coast of Alaska. The Alaska Range

to the north, northwest and west of Fort Richardson forms a barrier to very cold air from interior Alaska in winter and warmer air in summer. The Chugach and Kenai Mountains to the east and southeast form a barrier to prevent the influx of warm and moist air from the Gulf of Alaska reaching Fort Richardson. The waters of Cook Inlet serve to moderate the temperatures by providing for cool summers and moderately cold winters. Fort Richardson has a long winter with subfreezing temperatures, usually from mid October to mid April. High pressure weather systems during the winter period may lead to successive days with the temperature below zero Fahrenheit. Extreme cold temperatures may reach minus 40° F. The spring season is marked by 'break-up' when the snow melts and temperature rises. Summers are short and cool with temperatures rising only occasionally above 70° F. Autumn on Fort Richardson is short beginning in September and ending in mid October.

2.2 Description of Proposed Action

USARAK proposes to construct new security fencing along the northeast boundary, the Glenn Highway Corridor, and the south and southwest boundary on the Fort Richardson Military Reservation. The location of the security fencing will begin at the northeast boundary of the installation where it meets Knik Arm and will proceed southward in nineteen segments comprising a total distance of 33.8 miles. A listing and description of the fencing segments along the boundary from Knik Arm to the Davis Range (South Post) is shown in Table 1. The security fencing segments are also shown on a map (See attached).

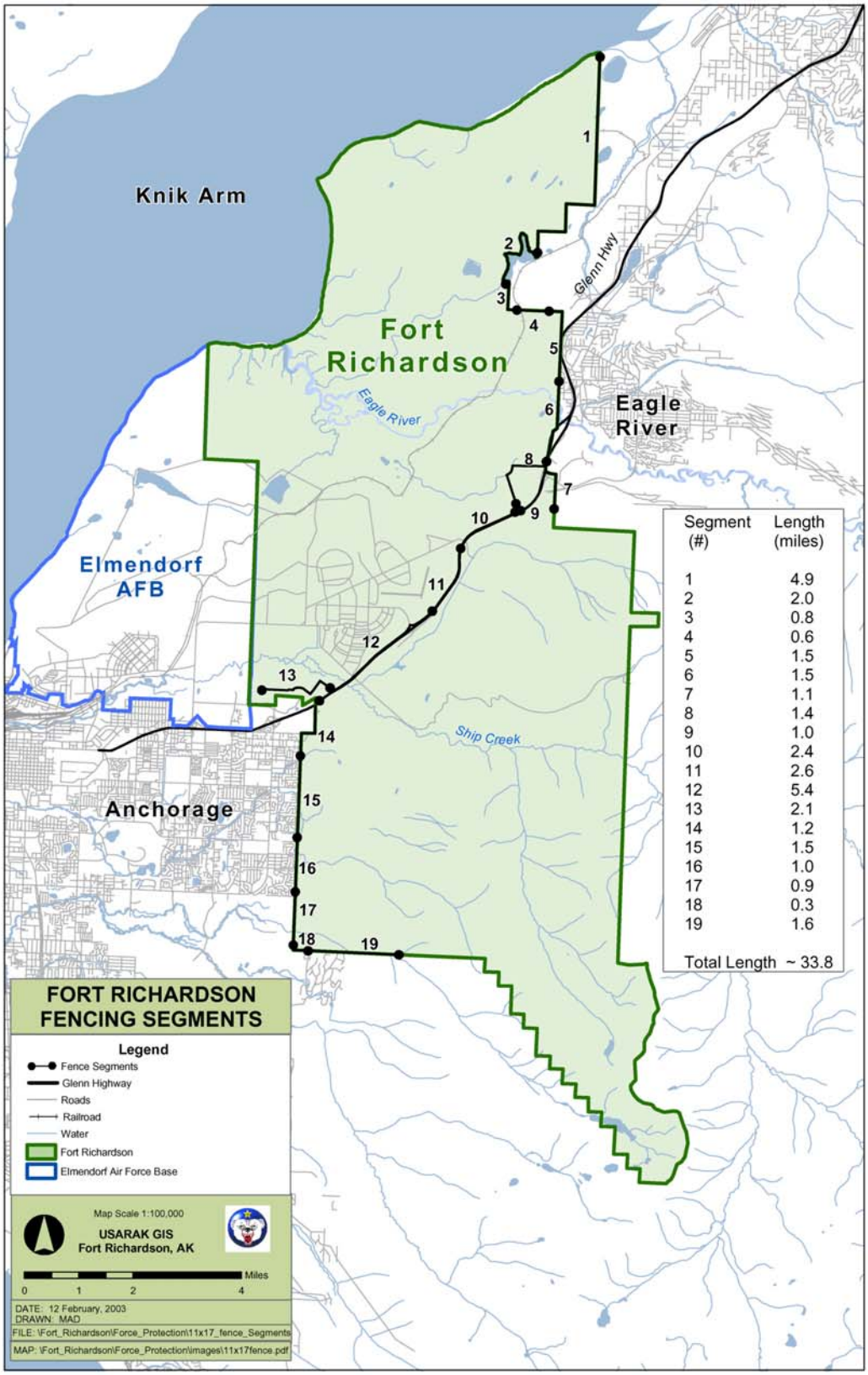
Due to funding limitations, all of the security fencing that has been identified as necessary may not be constructed at one time. However, given the priority of security needs and the design and placement of fencing segments, the fact that only portions of the fencing may be funded, or that construction may be effected segment-by-segment rather than all at one time, will not diminish the importance and security value of the fencing segments constructed.

The initial concept and the preferred action is to install a combination security fence composed of standard eight-foot chain link mesh with three string barbed wire on top plus three horizontal pipe rails incorporated into the fence. A sketch of the combination security fence is shown in Figure 1. This type fencing provides USARAK with the desired security and anti-terrorism/force protection measures the Command requires. Specifications for the combination security fence are shown in Table 2. Gates in the combination security fencing will be installed at seven locations (Table 3). Existing fencing that is inadequate or not up to the combination security fencing specifications will be replaced. Three choices are available for installing new fencing, including: (1) Retrofit existing fence (remove wire and install chain link mesh and add pipe rail); (2) Build new fence alongside existing fence; and (3) Remove and replace existing fence. The Corps of Engineers will analyze options and will make recommendations based on economic considerations and the Army's security and anti-terrorism/force protection requirements. Existing net wire fencing is found in Segments 5, 8, 12, and 14. Existing pipe rail fencing is found in Segments 4 and 15.

Table 1. Fencing Segments, Fort Richardson, Alaska

Segment 1. Knik Arm to Clunie Lake (4.9 Miles)
Segment 2. Around west side of Clunie Lake (2.0 Miles)
Segment 3. South end of Clunie Lake south and east to Alaska RR (0.8 Mile)
Segment 4. Alaska RR east to wetlands ((0.6 Mile)
Segment 5. Wetlands to Artillery Road (1.5 Miles)
Segment 6. Artillery Road to Anchorage Regional Landfill (1.5 Miles)
Segment 7. Highland Road to Chugach Mountain Slopes (1.1 Miles)
Segment 8. North and west boundary of Anchorage Regional Landfill (1.4 Miles)
Segment 9. Anchorage Regional Landfill south to Weigh Station (1.0 Mile)
Segment 10. Weigh Station to Camp Denali (2.4 Miles)
Segment 11. Camp Denali to existing fencing on Glenn Hwy (2.6 Miles)
Segment 12. Existing fencing along Glenn Hwy (5.4 Miles)
Segment 13. Alaska Native Heritage Center to Elmendorf Hospital (2.1 Miles)
Segment 14. Glenn Highway south to North Fork of Chester Creek (1.2 Mile)
Segment 15. North Fork Chester Creek south to Northern Lights Blvd (1.5 Mile)
Segment 16. Northern Lights Boulevard south to Tudor Road (1.0 Miles)
Segment 17. Tudor Road south to boundary corner (0.9 Miles)
Segment 18. Boundary corner eastward to 200-meter contour (0.3 Mile)
Segment 19. Two hundred meter contour east to 500-meter contour (1.6 Mile)

Total Number Miles of Fencing: 33.8 Miles


Knik Arm
Fort Richardson
Eagle River
Glenn Hwy
Eagle River
Elmendorf AFB
Ship Creek
Anchorage
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Segment (#) Length (miles)
1 4.9
2 2.0
3 0.8
4 0.6
5 1.5
6 1.5
7 1.1
8 1.4
9 1.0
10 2.4
11 2.6
12 5.4
13 2.1
14 1.2
15 1.5
16 1.0
17 0.9
18 0.3
19 1.6
Total Length ~ 33.8
FORT RICHARDSON FENCING SEGMENTS
Legend
Fence Segments
Glenn Highway
Roads
Railroad
Water
Fort Richardson
Elmendorf Air Force Base
Map Scale 1:100,000
USARAK GIS
Fort Richardson, AK
Miles
0 1 2 4
DATE: 12 February, 2003
DRAWN: MAD
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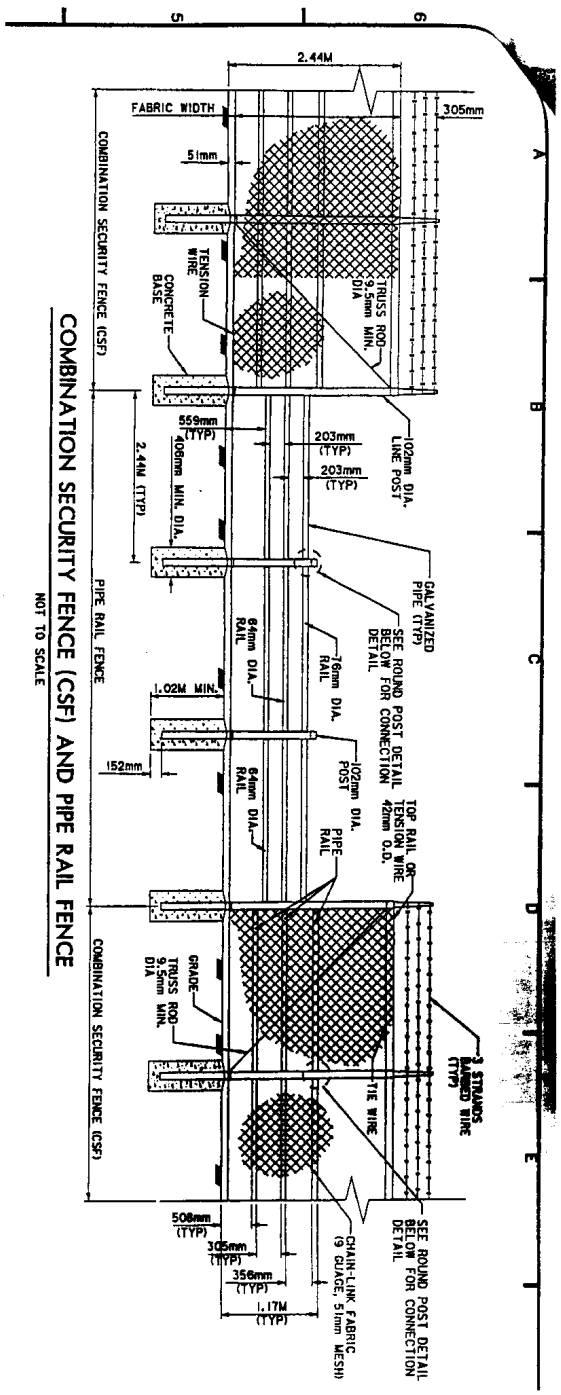

Figure 1. A Sketch showing the Combination Security and Pipe Rail Fences

Table 2. Specifications for Combination Security Fencing, Fort Richardson, Alaska

Chain Link

- Chain Link 9 Gauge
- Eight Foot Chain Link Mesh with Posts on 5 foot centers
- Four Inch Pipe Posts Pile Driven or in 40" deep x 16" diameter hole with concrete
- Three Barbed WireTop Guards that extends outward at a 45° Angle away from Installation Boundary

Pipe Rail (Round)

- Three Horizontal Galvanized Pipe Rails
- Diameter of Bottom Rail (2 ½"); Mid Rail (3"), Top Rail (4"); Posts (4")
- Rail Spacing:
  Between the Ground and the Bottom Rail: 20
  Between Bottom and Middle Rail: 12"
  Between Middle and Top Rail: 14"

Table 3. Locations for Boundary Fencing Gates, Fort Richardson, Alaska[1]

1. Clunie Lake. Fencing Segment 2. Four, one-way vehicle gates, 12 foot opening, sliding cantilever or swing, match combination security fence. Two pedestrian gates, 5 foot openings with 6 foot bollard in center. These gates will allow boaters access to the two parking lots on the west side of Clunie Lake. If the fencing at Clunie Lake is placed along the Alaska Railroad right-of-way, no gates will be needed in the Clunie Lake area.

2. Artillery Road. Fencing Segment 5. One vehicle gate with a 30 foot opening. Double sliding cantilever or swing. Match combination security fence.

3. Frontage Road. Fencing Segment 12. On the east side of the Fort Richardson Interchange along the Frontage Road to Moose Run Golf Course. One vehicle gate, 30 foot opening, double sliding cantilever or swing. Match combination security fence.

4. Arctic Valley Road. Fencing Segment 12. East side of the Glenn Highway. Same specifications as for #3 above.

5. Oilwell Road. Fencing Segment 14. Same specifications as #3.

6. Water Well Road. Fencing Segment 16. One vehicle gate, 20 foot opening, double sliding cantilever or swing. Match combination security fencing. This gate will allow Anchorage Water and Wastewater Utility access to the three large capacity water wells in the vicinity. In addition, this gate will allow Iditarod musher's access to Fort Richardson from Far North Bicentinnial Park.

7. Bulldog Trail. Fencing Segment 18. One pedestrian gate that will be available for use during the Mayor's Marathon in June.

[1] Gates will be swing-type and manually operated with tamper-proof lock guards.

An option in lieu of the pipe rail fence incorporated into the combination fence to deter vehicles is to install a tri-beam guard rail fence. The posts used are H beams in shape and are driven in the ground on 6 foot 3 inch centers. The guardrail is bolted to the H frame. The guardrail is 20 inches wide and would be installed 20 inches above the ground. In this option, the top of the guardrail would be 40 inches high. The 4-inch supports (galvanized pipe) for the chain link mesh would be welded onto the H posts on 12 foot 6 inch centers. The guardrails would are easier to install, 30% less cost than the pipe rail fence, and are a greater barrier to vehicle passage than a pipe rail fence. The Corps of Engineers will evaluate this option to determine merit as a vehicle deterrent.

2.3 Alternatives

Seven alternatives for the fencing project were considered, a No Action Alternative, a full combination security fencing alternative, a combination fencing alternative that allows for passage of small, medium and large animals in important animal movement and migration areas, and a fencing alternative allowing expanded small, medium and large animals to pass through the fence. Other alternatives were considered, and as discussed more fully below, were eliminated from further consideration because the alternatives failed to meet the purpose and need of the proposed action or were too costly. These alternatives included fencing only the cantonment area, constructing a permanent masonry fence, and increasing sentry patrols and associated enforcement measures.

2.3.1 Alternative 1 - No Action

The National Environmental Policy Act requires the consideration of the No Action Alternative. This action represents the status quo. It provides a basis for comparison of the action alternatives and the Proposed Action. It also addresses concerns by avoiding or minimizing effects associated with the Proposed Action. The No Action Alternative of not installing security fencing does not accomplish the Army's requirements to provide protection along the installation boundary. However, as required by AR 200-2 and 40 CFR 1502.14 regulations, this alternative will be considered and discussed in Chapter 3 of this document.

2.3.2 Alternative 2 - Combination Security Fencing

The Combination Fencing Alternative is the preferred action because it satisfies the Army's need for security, anti-terrorism and force protection measures along the northeast and south post boundary and along the Glenn Highway Corridor. The eight-foot chain link mesh fence will be installed at ground level. This type of fencing will obstruct and prevent small, medium and large animal passage.

2.3.3 Alternative 3 - Security Fencing that Provides for Animal Passage

This alternative allows for small, medium and large sized animal crossings along the new fencing at key wildlife areas that are known migration routes and corridors. Small and medium sized animal passage can easily be accommodated in desired locations after the

new fencing has been installed. This can be accomplished by installing appropriate size openings (size and spacing intervals to be determined by Army biologists and Alaska Department of Fish and Game (ADF&G)) in the nine-gauge mesh fence with small bolt cutters. This will allow for 'on site' selection of appropriate locations and spacing. The areas where security and force protection could not allow for openings in the fence are the residential areas on north post (Eagle Glen Subdivision: 1.6 miles) and residential areas on South Post (Muldoon in East Anchorage: 3.0 miles). One other area where small and medium sized animals crossing the fence would not be required is along the north and west side of the Anchorage Regional Landfill (1.7 miles).

There are two major moose crossings that could be affected by the fencing project, namely the Glenn Highway between Camp Denali (National Guard Armory) and the State of Alaska Weight Station and the south boundary of Fort Richardson near the South Fork of Campbell Creek. Over 250 migratory moose move out of their late summer and early winter habitat in upper Ship Creek drainage and the western slopes of the Chugach Mountains in late December to the coastal plain lowlands on Fort Richardson. The migrating moose initially move into the Small Arms Range Complex and the Davis Range on South Post. The habitat is limited for the large number of migratory and resident moose using these areas in early winter. From the Small Arms Range, moose soon disperse across the Glenn Highway onto the Fort Richardson and Elmendorf AFB Cantonment areas. On South Post, moose move southwest into Far North Bicentennial Park. Constructing a pipe rail fence for these two areas would allow small calves to go under the bottom rail of the fence (22 inch clearance) and the larger moose to jump over the top rail (46 inches) of the fence. Specifications for the pipe rail fence are shown in Table 4. A sketch of the Pipe rail Fence is shown in Figure 1.

A small number of resident and transient bears (estimated at 15-20 black and up to 5 or 6 brown bears) can be found on Fort Richardson. Bears (both black and brown) could be adversely affected by construction of a combination security fence with no allowance for animal passage by interrupting normal movements and migrations patterns. In time, bears with their wide-ranging movement patterns would probably find a way around the fence. Fencing options (Alternatives 3 and 4) with the pipe rail fence providing for moose passage will also provide for bear passage. Although movement and migration patterns for bears would not be adversely affected by fencing Alternatives 3 and 4, the bears could occasionally use the fence to their advantage in pursuit of prey.

Table 4. Specifications for Pipe Rail Fencing, Fort Richardson, Alaska

Pipe Rail Fencing

- Allows for Large Animal Crossing (Moose Calves and Bear Cubs underneath the pipe and adults over the top)
- Three horizontal Galvanized Pipe (Round)
- Bottom Rail (2½" diameter), Mid Rail (3"), Top Rail (4"), Posts (4")
- Rail Spacing:
  Between the Ground and the Bottom Rail: 22"
  Between Bottom and Middle Rail: 8"
  Between Middle and Top Rail: 8"
- Post Spacing is 5 feet on Center
- Post Pile Driven or Concreted in Ground (40" x 16" hole)

2.3.4 Alternative 4 - Security Fencing that Provides for Expanded Animal Passage

In addition to allowing for animal passage through the fence as described in Alternative 3 above, continuous passage would be made to accommodate free passage for small and medium sized animals in most areas where the new fencing will be installed. Passage would be restricted only at Eagle Glenn and Muldoon housing areas. Small and medium sized animals could be accommodated by leaving a gap in the chain link mesh fabric of the new fencing by attaching the fabric at 20 inches above the ground for the full length of the fence. All small and medium sized animals would have free passage through the gap under the fence along its entire length.

An additional location where a pipe rail fence could be used for moose and bear crossings is within segment 1 along the northeast boundary (See attached map). Few bears are found on North Post of Fort Richardson. There is a resident herd of approximately 80 to 90 moose on the North Post of Fort Richardson (North of Eagle River). These moose do not move south of Eagle River or east of the Glenn Highway. Additionally, movement and exchange of moose from North Post across the installation boundary to the Glenn Highway is thought to be small. Allowing moose to cross fencing in this area would benefit the gene pool by not segregating the animals into two distinct herds. Security of the post in this area may preclude a pipe rail fence that allows large animals to cross because pedestrians can also cross this type of fence.

2.3.5 Alternatives Considered and Eliminated. Besides the alternatives discussed above, three other alternatives were considered and eliminated because these alternatives failed to satisfy the purpose and need for the proposed action, were cost prohibitive or otherwise infeasible. These alternatives will not be brought forward for further analysis in this Environmental Assessment.

2.3.5.1 Fencing the Cantonment Area. This alternative proposes to install security fencing around the Fort Richardson Cantonment area. This area requires the highest security of the entire installation. This alternative eliminates several environmental issues; however, it does not accomplish the objectives of demarcating the Fort Richardson boundary and preventing unauthorized personnel and vehicles from entering the installation. Because this alternative fails to meet the purpose and need of the proposed action, this alternative was eliminated from further consideration.

2.3.5.2 Permanent Masonry Fence. The second eliminated alternative concerns the construction of a permanent, masonry, and ten-foot high barrier type fence with embedded, concealed sensors and/or video monitors on the installation boundary and along the Glenn Highway Corridor. This is the most permanent and secure fencing alternative; however, the cost is approximately three times that of a standard, chain link fence. While this type of fencing may be desirable in locations near housing areas near the installation boundary, funding is not available for serious consideration.

2.3.5.3 Increasing Sentry Patrols and Enforcement. This third alternative would not involve installing fencing, but would consist solely of enhancing patrols and other

enforcement along the reservation boundary to minimize unauthorized access. This alternative has been eliminated because it would not satisfy the purpose and need of the proposed action and would not be possible to station patrols along lengthy segments of the reservation boundary at all times given staffing requirements. In addition, this alternative would be extraordinarily costly and difficult, if not impossible, in those portions of the reservation where the boundary is not clearly delineated.

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

A general overview of the existing physical and biological environment is presented and is based on the more detailed discussion of the existing conditions at Fort Richardson found in the Integrated Natural Resources Management Plan 1998-2003, U.S. Army Alaska, Volume 2- Fort Richardson. This section also discloses the environmental effects for the proposed action and alternatives. Mitigation for the proposed action is included in this section.

Natural resources under the stewardship and control of the Department of Defense shall be managed to support and be consistent with the military mission, while protecting and enhancing those resources for multiple use, sustainable yield, and biological integrity.

Land use practices and decisions shall be based on scientifically sound conservation procedures and technique. Land use practices will use scientific methods and an ecosystem approach. Biologically significant or sensitive natural resources (e.g., wetlands, critical habitats, animal migration corridors) or species shall be inventoried and managed to protect those resources, and to promote biodiversity.

Ecosystem management is a goal-driven approach to managing natural and cultural resources that supports present and future mission requirements; preserves ecosystem integrity; is at a scale compatible with natural processes; is cognizant of nature's timeframes; recognizes social and economic viability within functioning ecosystems; is adaptable to complex and changing requirements; and is realized through effective partnerships among private, local, State, tribal, and Federal interests. Ecosystem management is a process that considers the environment as a complex system functioning as a whole, not as a collection of parts, and recognizes that people and their social and economic needs are a part of the whole.

Biodiversity relates to the variety of life forms and processes and the environment in which they occur. Biodiversity includes the number and variety of living organisms, the genetic differences among them, the communities and ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting.

Sustainable yield manages a renewable resource to provide an annual or periodic yield of goods, services, and direct and indirect benefits, into perpetuity. That may include, but is

not limited to, maintaining economic benefits, ecological processes and functions, and biodiversity.

Stewardship is the management of resources entrusted to one's care in a way that preserves and enhances the resources and their benefits for present and future generations.

3.1 Description of Affected Environment and Possible Environmental Effects of Implementing No Action Alternative

3.1.1 Hazardous Waste / Materials

Fort Richardson is registered with the U.S. Environmental Protection Agency as a "Large Quantity Generator" of hazardous waste, per the Resource Conservation and Recovery Act (42 USC 6901). The wastes are temporarily stored in drums at satellite accumulation points located around post. Satellite accumulation points are located where wastes are generated on a continual basis. Other locations or facilities that do not generate wastes are subject to on-call collection of hazardous wastes. All hazardous wastes that are collected on post are brought to a centralized hazardous waste collection site to be processed for off-post disposal. These actions would continue under the No Action Alternative.

3.1.2 Physical Factors

3.1.2.1 Air Quality

The Federal Clean Air Act authorizes the Environmental Protection Agency to establish national ambient air quality standard to protect public health. Standards for six pollutants (i.e., ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter, lead particles) have been adopted. Fort Richardson is not included in an attainment area for federally regulated pollutants. Air quality would not be adversely effected under the no action alternative.

3.1.2.2 Noise

Noise can be assessed by two means. The first is by quantifying the average noise dose received at a location over a period of time. The second way noise can be assessed is by "peak" or "maximum" noise levels.

The most widely used metric for noise contouring is the day-night average sound level (DNL). The DNL represents energy-averaged sound levels measured by summation and averaging of sound exposure level values during a 24-hour period. The DNL is a useful descriptor for noise in two respects. First, it is an average; it fits intuitive concepts when dealing with continuous noise, such as that from a busy highway. Second, because it is a summation of sound energy over a 24-hour period, it is a cumulative metric. For intermittent sound, it represents the total sound being received rather than the sound level at any given time. In this respect, it effectively identifies a "noise dose" for a day.

Noise from transportation sources, such as vehicles and aircraft, and from continuous sources, such as generators, is assessed using the A-weighted DNL, which significantly reduces the measured pressure level for low-frequency sounds while slightly increasing the measured pressure level for some high-frequency sounds. Noise from small arms ranges is also assessed using A-weighted DNL.

Impulse noise resulting from armor, artillery, and demolition activities is assessed in terms of the C-weighted DNL, which characterizes high-energy blast noise and other low frequency sounds capable of inducing vibrations in buildings or other structures. The C-weighted scale does not significantly reduce the measured pressure level for low frequency components of a sound and therefore accounts for the potential of vibration.

Noise Zone III. Noise Zone III is an area around the source of the noise in which the DNL is greater than 75 dB, A-weighted for aircraft, vehicle, and small arms range noise, and greater than 70 dB, C-weighted for noise from weapon systems larger than 20-mm. The noise level within Noise Zone III is considered so severe that noise-sensitive land uses should not be considered therein.

Noise Zone II. Noise Zone II is an area where the day-night sound level is 65-75 dB, A-weighted or 62-70 dB, C-weighted. Exposure to noise within this area is considered significant and use of land within Noise Zone II should normally be limited to such activities as industrial, manufacturing, transportation, and resource production. However, if the community determines that land in Noise Zone II areas must be used for residential purposes, then noise level reduction features should be incorporated into the design and construction of the buildings.

Noise Zone I. Noise Zone I include all areas around a noise source in which the day-night sound level is less than 65 dB, A-weighted or less than 62 dB, C-weighted. This area is usually suitable for all types of land use activities.

The noise contours for current military activity (No Action Alternative) are contained within the military boundary, but some Zone II and III contours do overlap a small portion of the ocean near Eagle River Flats.

3.1.2.3 Floodplain

Parts of the proposed fencing project penetrate the flood plains of Eagle River, Ship Creek, and the North Fork of Campbell Creek.

3.1.3 Biological and Ecological Factors

3.1.3.1 Vegetation and Soils

The vegetation on the coastal plain where the fence is to be installed is primarily a lowland interior forest of mixed spruce and hardwoods commonly referred to as boreal forest. Trees include white and black spruce, birch, aspen, and balsam popular. Common woody shrubs include Scouler and Bebb willow, Sitka and thin leaf alder, and resin birch. Other shrubs include prickly rose, devil's club, American red currant,

bearberry, buffaloberry, bog blueberry, crowberry, high bush cranberry, low bush cranberry, raspberry, Labrador tea, rusty menziesia, and bush cinquefoil. Herbaceous plants include giant reed grass (Calamagrostis), arctagrostis, fescue, sedges, twinflower, and lupine. Numerous species of mosses, lichens, and hepatics are also present.

Fort Richardson's soils are shallow, immature and deficient in the primary plant nutrients, especially nitrogen and phosphorous. In addition, they often exhibit low water retention capability, making them a primary limiting factor for vegetative growth during dry periods. In depressions and saturated areas, such as wetlands, surface horizons may be covered with partially decomposed herbaceous vegetation called peat.

The conditions are expected to remain the same under the No Action Alternative.

3.1.3.2 Wetlands

On Fort Richardson, there are freshwater and saltwater marshes, bogs, lakes and lake margins, and riparian areas. These wetlands may or may not qualify as jurisdictional wetlands (i.e. as defined in Section 404 of the Clean Water Act). Jurisdictional wetlands are determined by the Corps of Engineers on the basis of hydric soils, aquatic vegetation, and hydrology. The post has estuarine, palustrine, riverine, marine, and lacustrine wetlands. Wetlands would not be affected under the No Action Alternative.

3.1.3.3 Small and Medium Sized Animals

Small game and furbearers found on Fort Richardson include coyote, wolf, lynx, red squirrel, snowshoe hare, hoary marmot, marten, beaver, river otter, wolverine, red fox, porcupine, and mink. The No Action Alternative would not affect these animals.

3.1.3.4 Large Sized Animals

The size of Fort Richardson's herd makes it the largest concentration of wintering moose in the Anchorage urban area. The long-term vitality of the herd is due, in part, to wildlife management practices by Fort Richardson and ADF&G since the mid-1960s. Fort Richardson has had limited success in improving moose browse and clearing and rehabilitating areas for preferred plant species. Likewise, ADF&G has taken great interest in promoting the population and improving recreational value of moose for the Anchorage area. USARAK and ADF&G manage moose cooperatively in accordance with a 1992 cooperative agreement drafted solely for the purpose of conserving the moose population. During recent discussions between USARAK and ADF&G personnel, the fall population objective of 600 moose was reduced to 500 to minimize the potential for a high rate of mortality due to over-browsing.

Over 250 migratory moose move out of their late summer and early winter habitat in upper Ship Creek drainage and the western slopes of the Chugach Mountains in late December to the coastal plain lowlands on Fort Richardson. The migrating moose initially move into the Small Arms Range Complex and the Davis Range on South Post. The habitat is limited for the large number of migratory and resident moose using these areas in early winter. From the Small Arms Range, moose soon disperse across the

Glenn Highway onto the Fort Richardson and Elmendorf AFB Cantonment areas. On South Post, moose move southwest into Far North Bicentennial Park.

A small number of resident and transient bears (estimated at 15-20 black and up to 5 or 6 brown bears) can be found on Fort Richardson.

Animal movements would be expected to continue under the No Action Alternative.

3.1.4 Land Use Factors

3.1.4.1 Recreational Users on Fort Richardson

Consistent with current USARAK policy, Fort Richardson is managed for a number of different types of public recreational use. All areas that are determined open for recreational use may be closed temporarily during periods of military use. Recreational areas are areas that are open to all types of recreation, including off-road vehicles (ORVs). Modified recreational use areas are areas that are open to hunting, fishing, trapping, hiking, skiing, and berry picking, but are not open to any type of ORV, except in the winter. Limited recreational use areas are restricted to all types of recreational use year-round except hiking, skiing, bird watching and berry picking. Off-limits areas are restricted to public access and use year round. These restrictions would continue under the No Action Alternative.

Chugiak Dog Mushers have obtained a license from Fort Richardson to run their dogs on North Post since the early 1980s. Under this license, Mushers are required to enter and exit the reservation at the Main Gate House. The Mushers have a parking and dog harnessing area on the Beach Lake Road a short distance from the Fort Richardson boundary.

3.1.5 Cultural Factors

3.1.5.1 Background

Cultural resources include features and objects dating to the prehistoric and historic periods that are found or are likely to be found as defined by the National Historic Preservation Act (NHPA) of 1966 (as amended). Cultural resources relating to the NHPA and the Native American Graves Protection and Reparation Act are considered as part of the EA process. Management of cultural resources on federal lands depends on eligibility of resources for inclusion in the National Register of Historic Places (NRHP).

3.1.5.2 Fort Richardson

Although cultural resources in all five National Register of Historic Places' categories potentially exist on Fort Richardson, only 1 District and 1 Site have been determined eligible, and are managed under NHPA.

3.1.5.2.1 Prehistory

Human occupation of the Cook Inlet region became possible only after glacial retreat from the region during the late Pleistocene. Geologic evidence suggests that areas suitable for human occupation could have opened as early as 15,000 years ago. However, the earliest known site in the Cook Inlet region, the Beluga Point Site, is at most 8,000 years old. The prehistory of the Cook Inlet region is not understood as well as other Alaskan regions. The state of knowledge is based on cultural materials found at a few key sites.

3.1.5.2.2 Early Holocene Era (8,000 – 6,000 years ago)

The most significant site in the Cook Inlet region is the Beluga Point Site on the northern shore of Turnagain Arm near Anchorage. Artifacts from Beluga Point are similar to those found at Long Lake in the upper Matanuska River Valley and at sites in the interior of the Kenai Peninsula. Artifacts from these sites have been associated with the Denali Complex of Interior Alaska. Peoples occupying the region probably entered from interior Alaska and practiced terrestrial hunting and gathering. No sites from this era have been identified on Fort Richardson.

3.1.5.2.3 Middle Holocene Era (6,000 – 3,000 years ago)

The period from 6,000 to 3,000 years ago is poorly represented in the region's archaeological record. The most important are also from the Beluga Point Site and date prior to 3,000 years ago. The findings suggest affiliation with the Ocean Bay Tradition (6,000 – 5,000 years ago), a cultural tradition associated with the Alaska Peninsula and Kodiak Island. People of the Ocean Bay Traditions were specialized for coastal life and practiced marine subsistence with emphasis on fish and marine mammals. No sites from this era have been identified on Fort Richardson.

3.1.5.2.4 Late Holocene Era (3,000-1,000 years ago)

Numerous sites in the Cook Inlet region dating from 3,000 to 1,000 years ago indicate Pacific Eskimo cultural affiliation. For example, a third component from the Beluga Point Site, dating between 2,200 and 2,500 years ago, suggests affiliation with the Northern Tradition (3,000 – 1,000 years ago), a Pacific Eskimo tradition of the Bering Sea coast. No sites from this period have been identified on Fort Richardson.

Other sites in the region suggest the influence of the Kachemak Tradition (3,500 – 1,000 years ago), which existed around the Pacific Rim from the Alaska Peninsula and Aleutians to present-day Washington State. Kachemak components have been found at the Fish Creek Site just south of Knik, the Cottonwood Creek site, and the Moose River site.

3.1.5.2.5 Late Prehistoric Era (1,000 – 250 years ago)

Archaeological evidence suggests that people with an Athabascan material culture had entered the Cook Inlet region by 700 years ago. Many late prehistoric Athabascan sites exist in the region, and are believed to be associated with the Tanaina, or *Denaina*, Athabascans who were in the region when Captain Cook arrived. No sites from this period have been identified on Fort Richardson.

3.1.5.2.6 History

In 1778 Captain Cook encountered the Denaina people in Cook Inlet. This event marked the first recorded contact of the Native people with Europeans. However, Russian fur traders, who began operating in the Alaskan territory early in the 18th century likely made earlier contact.

Denaina subsistence was based primarily on caribou and the five species of salmon, as well as Pacific harbor seal, moose, bear, mountain goat, squirrel, and Dall sheep. The Denaina apparently borrowed many cultural traits and tools, such as the kayak, from neighboring Eskimo groups.

Several Denaina villages were located near Fort Richardson. Eklutna, approximately 10 miles from the post, is the only one still in existence. The most significant Native village of the areas was Knik, located near the mouth of the Knik and Matanuska rivers. A number of fish camps were used at Ship Creek, Fire Island, Point Woronzoff, and the mouth of Eagle River.

3.1.5.2.7 American Era (1867 – 1938)

The U.S. purchase of Alaska in 1867 led to greater Euro American influence in the region. Exploration and immigration by Anglo-American trappers, miners, and settlers increased after the purchase, and increased following discovery of gold in the late 1800s, in both southeast, and then interior, Alaska.

The growth of Anchorage was closely associated with the development of the Alaska Railroad, which began as a construction camp and headquarters of the Alaska Railroad in 1913. In 1912 a territorial government was established in Alaska, and the Alaska Railroad, linking Seward, Anchorage, and Fairbanks was completed in 1923.

The Great Depression resulted in increased construction and development of social infrastructure throughout Alaska, including schools, bridges, trails, harbors, and water systems. In addition, 202 families were relocated to agricultural land in the Matanuska Valley during the 1930s. In 1935 a highway was constructed connecting the new agricultural colony with Anchorage. The remnant of this highway, the Old Richardson Highway, runs across Fort Richardson.

3.1.5.2.8 Military Era (1939-present)

Fort Richardson was established in 1939. During World War II, Fort Richardson served as a coordinating location for the war efforts in Alaska. Military strength in Alaska had been less than 3,000 soldiers, but soon grew to 7,800 at Fort Richardson, including the 4th Infantry, 81st Field Artillery, and 75th Coast Artillery.

After World War II, Fort Richardson was used for training and administrative support for Army forces in Alaska. The post became headquarters for the newly established U.S. Army Alaska in 1947. Subsequent to the formation of the U.S. Air Force in 1947, Fort Richardson relocated to its present location in 1950 with old Fort Richardson being renamed Elmendorf Air Force Base. U.S. Army Alaska became the 172 Infantry Brigade (Alaska) in 1974 and the 6th Infantry Division (Light) in 1986. Following the Cold War, the 6th Infantry Division (Light) was deactivated, and Army forces were reorganized under U.S. Army Alaska.

3.1.5.3 Previous Consultations, Reports and Inventory

3.1.5.3.1 Archaeological Surveys

Previous archaeological work at Fort Richardson includes a least seven projects since the late 1970s. Of these surveys, only three reported the discovery of archaeological sites. Two of these indicate that moraine features scattered across Fort Richardson and oriented roughly northeast by southwest, are more likely to contain archaeological sites. In 2002 approximately 6,000 acres were surveyed east of Eagle River Flats. No archaeological sites were found in the surveyed areas.

In addition to the archaeological sites on Fort Richardson, several locations of historical and ethnographic significance exist. Although the exact locations are not known, historical and ethnographic documentation indicate that they all have the potential to be found.

The first two features are portions of the Iditarod Historic Trail; ANC-270, the Eagle River-Knik Trail, and ANC-280, the Girdwood-Ship Creek Connecting Trail. Although ANC-270 probably lies outside of the base, a connecting trail from Anchorage to ANC-270 existed. This connecting trail followed the Eagle River drainage from Knik Arm to Clunie Lake, and on to Birchwood. This route probably followed Clunie Creek north from Eagle River to Clunie Lakes.

3.1.5.3.2 Architectural Surveys

Two building surveys have been conducted on Fort Richardson, and these addressed only Nike Site Summit and select Cold War-era buildings. A 1995 survey addressed the Nike Site Summit property as a historic district and identified 25 contributing buildings and structures. The evaluation resulted in the nomination and subsequent listing of Nike Site Summit in the National Register of Historic Places. The Cold War-era building survey

indicated that only the Nike Site Summit has exceptional importance needed for properties less then 50 years old to be eligible for listing in the National Register.

3.1.5.3.3 Effects of Implementing the No Action Alternative

No Historic Properties would be affected under the No Action Alternative.

3.2 Description of the Possible Environmental Effects of Implementing Alternative 2 (Installing Combination Security Fencing)

3.2.1 Hazardous Waste / Materials

In response to the National Priorities Listing, the Army, Environmental Protection Agency, and the Alaska Department of Environmental Conservation signed a Federal Facilities Agreement for Fort Richardson. The agreement designated four Operable Units on Fort Richardson to represent potential source areas for hazardous substances. None of these areas are along the installation boundary or the Glenn Highway Corridor where fencing is proposed. Additionally, no known hazardous waste or materials, reported or suspected, are along the Fort Richardson boundary and the Glenn Highway Corridor that would affect the fencing project.

3.2.2 Physical Factors

3.2.2.1 Air Quality

The operation of heavy equipment during construction of the fencing under Alternative 2 would release small amounts of carbon monoxide into the air. Appropriate emission control devices on vehicles would minimize impacts on air quality during construction.

3.2.2.2 Noise

In the short term, operation of heavy equipment will generate noise and traffic that can affect built up residential areas along the installation boundary in Eagle Glen Subdivision and along the Muldoon area of East Anchorage. The public in these affected residential areas should be notified prior to construction so that they are prepared for the temporary impacts and inconveniences. This noise would be temporary in nature, ceasing upon completion of construction.

Ordinary and regular maintenance activities would not present substantial noise concerns, although maintenance and vehicle boundary patrols could occasionally create impacts that are relatively minor and of a short duration. Over the long-term, in those areas where unauthorized access has occurred near residents on property adjacent to the reservation, the installation of a boundary fence may reduce such unauthorized access and any noise otherwise generated by such access, such as vehicular noise from trespassers, would be reduced.

3.2.2.3 Floodplain

Compliance with Executive Order 11988 (Floodplain Management) states that structures will not impede or channelize stream flow. The fencing along Eagle River, Ship Creek, and the North Fork of Campbell Creek floodplains will not impede or channelize stream flows on any of the water bodies. The Executive Order also requires that alternatives to floodplain development be considered. With respect to the proposed construction of fencing within the floodplain, no practicable alternative exists that will satisfy the purpose and need of the action because the fencing must be at the reservation boundary.

3.2.2.4 Infrastructure

Utility lines including water, electric, sewer, and petroleum are located adjacent to the installation boundary on South Post and along the Glenn Highway. It will be necessary to conduct locates and obtain clearances from all utilities near the fencing project prior to construction.

In some segments of the fencing project, the installation boundary was surveyed in the past, however, the boundary markers cannot be located. In these areas, new surveys will be required to locate the boundary prior to installation of the fence. Areas requiring surveys are along the Glenn Highway Right-of-Way, the Alaska Native Heritage Center, Bartlett High School, and perhaps along the North Fork of Campbell Creek.

3.2.3 Biological and Ecological Factors

3.2.3.1 Vegetation and Soils

Vegetation and soils will be affected by the fencing project. Since most of the fencing along the installation boundary is in forested areas, trees will have to be removed in an approximately 20-foot wide right-of-way to accommodate the fence. The fence would be installed no more than 12 inches from the installation boundary line. Vegetation would be cleared only to 20 feet on the inside of the fence line. Surface soils will be disrupted when dozers grub the tree roots. Slash materials will be chipped and spread thinly over the cleared site. Excess piles of chipped materials will be hauled off site to an approved disposal area. Care must be taken not to berm or remove surface soils during the clearing or grubbing operation. With native soils left in place, the cleared area will become revegetated by natural invasion of herbaceous and deciduous plants.

Most areas where the fencing will be installed are flat or near level terrain. Erosion will not be a concern in these areas. One area has significant slopes (from 5% to 20%) that must be revegetated immediately after the fence is installed. This area is the southern boundary area along the North Fork of Campbell Creek. An Alaska mix of ryegrass and fescue should be used to revegetate the area after the fence has been installed.

3.2.3.2 Wetlands

Wetlands occur in numerous places along the boundary where the fencing will be installed. These wetland areas are in Segments 1, 2, 3, 4, 15, 16, 17, and 19. Installing the fencing when the ground is thawed would require permits from the Corps of Engineers to comply with Section 404 of the Clean Water Act. Installing the fencing when the ground is thawed would result in sizable impacts on wetlands including rutting, vegetation removal, and alterations in hydrology.

3.2.3.2.1 Mitigation for Wetlands

To avoid substantial impacts to wetlands, the fencing will be installed during the winter when the ground is frozen. Frozen ground and water bodies will support equipment needed to install the fence. This will prevent rutting and destruction of vegetation. Pipe will be driven in the wetland areas thus eliminating digging holes and pouring concrete. This will eliminate the need for Corps permits since there would be no filling in wetlands. The proponent has decided that the wetland areas identified above can wait until the following winter for installation of the security fence.

3.2.3.3 Small and Medium Sized Animal Movements and Migration

Small and medium sized animals, i.e., wolves, coyotes, foxes, lynx, marmots, red and ground squirrels, mink, and weasels would be trapped and unable to pass through the fence if the chain link mesh was installed at ground level. Obstruction of small and medium sized animal movements could prevent normal and natural migrations needed for food resources, denning and rearing, and safe haven from predators. Predators could use the fence to trap large numbers of prey species and decimate wildlife populations. The fence would tend to segregate small and medium sized animal populations on both sides of the fence. Gene pools for the animals could be reduced. Although some of the smaller mammals, i.e., mice, lemmings, voles, and shrews may burrow under the fence, free and natural movement would tend to segregate the other small mammals on both sides of the fence. Medium sized animals would be more adversely impacted. This would result in large adverse impacts to the animals.

3.2.3.3.1 Mitigation for Small / Medium Sized Animal Movements and Migration

Mitigation measures to alleviate the adverse affects of small and medium sized animal movement and migration problems would be to install appropriate size openings in the bottom portion of the chain link mesh fence at key locations to allow animal passage. Alternative 3 in this document provides for installing these openings in the fence to allow animals to pass in all areas with the exception of fence segments near residential housing areas. The housing areas are Segments 5 (Eagle Glen Subdivision: 1.6 miles) and Segments 13 and 14 (Muldoon in east Anchorage: 3.0 miles) where optimum security is necessary for safety and security reasons. See Map. These areas do not exhibit abundant wildlife as much of the habitat has been removed for residential housing development, and thus the mitigation measure would not be needed.

3.2.3.4 Large Animal Movements and Migration

Moose and bears are the large animals that would be affected by installing the combination fencing along the installation boundary and the Glenn Highway Corridor. Obstruction of two major moose migration routes on Fort Richardson could confine and concentrate relatively large numbers of moose (up to 300) in areas with inadequate food sources during the winter and spring. Moose utilizing the Small Arms Range Complex and the Davis Range on South Post of Fort Richardson would most likely suffer a sharp and significant decline. The physical condition of the animals would decline and the productivity of the herd would most likely plummet for several years until the population stabilized to the carrying capacity of the available habitat.

Prevention of normal migration could also result in higher densities of moose in developed urban areas where traffic and safety factors may be a concern. A decrease in moose numbers on Fort Richardson could also result in the lowering of the number of permits issued for the annual moose hunt. Normal bear movement and migration along the forested coastal plain from Anchorage through Fort Richardson to Eagle River and vice versa could be impeded by the combination security fencing.

The installation of the security fencing could affect winter training by concentrating moose on the Small Arms Complex and the Davis Range. New training facilities, i.e., Infantry Squad Battle Course, Shoot House, and Breach Facility are scheduled for construction on the Davis Range near Bunker Hill in summer 2003. At present, when training is conducted in these areas, moose appear to readily disperse. Installation of the security fence may result in a more difficult dispersal of these animals. With high concentrations of moose around the ranges, problems and delays could frequently occur until the moose are moved out of the ranges. These delays and interruptions could substantially impact the training mission.

3.2.3.4.1 Mitigation for Moose and Bears in a Small Restricted Area

There are few, if any, mitigation measures that would be adequate to generate the amount of winter / spring food supply necessary for sustaining the large number of moose that would be confined by the new fencing. In a similar situation, much of the traditional wintering grounds for the Yellowstone elk herd were lost to land development. To resolve the problem, the government began a massive feeding program when the elk migrated from the mountains to what remained of their wintering grounds near Jackson Hole, Wyoming. This elk-feeding program, where hay and livestock feeds are provided daily in winter, still goes on today at a very high cost to the government. Winter-feeding for a large herd of moose has never been attempted although researchers have developed feedstocks for moose.

Whether of not the feedstocks would be sufficient for a large moose herd over the wintering period is questionable. The infrastructure with barns, vehicles, and labor would

be very costly. Feeding moose during the winter would be an unlikely option in Alaska and one the Army could not support.

Another seemingly obvious mitigation measure would be the development of additional habitat in the confined area to supplement the existing food supplies. It is highly problematic that sufficient new habitat (several hundred acres) could be developed for up to 300 moose. This would be a difficult task and the cost would be very high. In addition, there would be a need to constantly develop new habitat on a yearly basis so that productive feeding areas are maintained and are available to moose each winter when they come down from the mountains. This is not a likely option that the Army would agree to undertake.

Some bears on Fort Richardson would be constrained in using their territorial ranges with the new combination security fencing. However, because they wander so widely, they would probably find a way around the fencing.

The best mitigation to resolve the moose and bear restrictions would be to adopt Alternative 3, (Fencing Which Provides for Animal Passage). This would allow moose movements and migration to go on uninterrupted by installing pipe rail fences in two major crossing areas, one, along the Glenn Highway Corridor and the other on South Post. Bears would also use the pipe rail crossings. Selection of this alternative depends on security and force protection of the installation in these two areas.

3.2.4 Land Use Factors

3.2.4.1 Recreational Users on Fort Richardson

The new security fencing will not alter any authorized recreational opportunities. Fort Richardson has continuously provided recreational users access to the post through the Main Gate House off the Glenn Highway. For years, recreational users living near the installation boundary (Eagle Glen in Eagle River and Muldoon in east Anchorage) have, with relative ease, illegally entered the installation from nearby streets and adjacent subdivisions due to the lack of fences. Individuals have taken advantage of the mild security by penetrating the boundary and entering the reservation wherever it was convenient. This unauthorized access will come to an end when the new security fencing is installed. Recreational users will be required to go through the official procedure of checking in at the Main Gate for recreational activities on Fort Richardson. By doing do so, they will be informed as to which areas they may use and which are restricted for safety, security, and training mission requirements. This will ensure against unauthorized recreational users entering military training areas on Fort Richardson, which is essential to the existing military mission. In addition, if USARAK undergoes transformation to a new Stryker Brigade Combat Team, a decision currently pending completion of environmental documentation, then USARAK will be using training land more intensively in the near future and it will become even more necessary to secure the installation boundary from trespassers. Reducing unauthorized access will assist safety efforts on the installation.

3.2.4.2 Chugiak Dog Mushers

Due to the closeness to the parking area, many of the Mushers have taken advantage of entering the reservation at this location instead of driving to and obtaining permission from the Main Gate House. When the new security fence is installed, the Mushers will no longer be able to enter the reservation from the nearby parking area but will have to adhere to the stipulated requirement of going through the Main Gate to access North Post and the trails to run their dogs. By doing so, they will be informed as to which areas they may use and which areas are restricted for safety, security, and training mission requirements.

3.2.4.3 Mayor's Marathon and Iditarod Dog Racing Trails on Fort Richardson

These events will not be adversely affected by the installation of the new security fencing. Gates in the new fencing will be installed where trails enter or exit the Post.

3.2.4.4 Clunie Lake

The boundary of Fort Richardson in the Clunie Lake area passes down through the middle of the lake in an east / west and then in a north / south direction. To install a fence that secures the installation, it is necessary to build a fence around the north and west shoreline of the lake. The fence will block approved recreational access to Clunie Lake on the west side parking areas unless the fence is designed to take this into account. Gates will need to be installed in the fence so recreation users can access the parking area in two locations on the west side of Clunie Lake. The lake is stocked on an annual basis with rainbow trout and landlocked salmon by Alaska Department of Fish and Game from the Fort Richardson Fish Hatchery. Recreational fishers from Fort Richardson and the public use the fishery in both summer and winter (fishing through the ice in winter).

A second option is to build the security fence along the Alaska Railroad Right-of-Way in the vicinity of Clunie Lake. Alaska Railroad has indicated this may be a viable alternative. The Railroad will be upgrading the track near Clunie Lake in two to three years. After the tracks have been realigned, it may be feasible to build the security fence along the eastern side of the Railroad Right-of-Way. However, no fencing would be installed until the Railroad upgrades are completed.

3.2.4.4.1 Mitigation for Fishing Access to Clunie Lake

A plan that will provide acceptable recreational access to the lake and still provide reasonable security in the Clunie Lake area is required. The Clunie Lake area could not be secured by installing a fence to the northern tip of the lake and then continuing the fence on the south side. The one-mile gap in the fence, as the boundary is along the middle of the lake, would leave wide-open access when the lake is frozen to snow machines and all terrain vehicles. A fence could not be installed on the east side of Clunie Lake because this is not military land.

If the fence on the west side of the lake is installed near the shoreline, the parking lots could be used without vehicles passing through gates. Small gates could be installed at the parking lot to allow foot traffic and transfer of boats, fishing gear, etc. to the lake. Bollards could be placed in the ground so that the gates could be left open. Snow machines would not have passage through the gates onto the installation. If high alert or increased security was needed, the gates could be closed and locked.

3.2.4.5 Existing Fence along Glenn Highway

The existing net wire fence along the Glenn Highway from the Fort Richardson Interchange southwest to Muldoon Interchange was installed in the early 1980s to reduce the number of moose / vehicle collisions. There were two mitigation measures to allow passage so that normal moose migration was not interrupted. One was to raise the bridge over Ship Creek and construct a walkway along the creek for moose to pass under the Glenn Highway. The other was to install one-way gates in the fence so that animals trapped on the highway could escape and get off of the highway right-of-way.

This existing fencing along the Glenn Highway does not provide the security or force protection required by the Army. To upgrade the fencing along the Glenn Highway, three options are being evaluated, they are: (1) retrofit the existing fence, (2) building new fencing alongside the existing fence, and (3) remove the old fence and replace with the new fence.

Moose passage gates incorporated into the existing fence along the Glenn Highway greatly compromises the future installation's security. In addition, the gates have been shown to be only marginally effective in providing passage for moose. Moose passage gates will not be an incorporated feature of the new security fencing.

3.2.4.6 Vulnerable areas along New Fencing Project

Several areas along the new fencing project cannot accommodate secure fencing due to unsolvable circumstances. These areas include: (1) Alaska Railroad tracks crossing the installation boundary on North Post (Segment 4); (2) Eagle River (Segment 6); (3) Moose Gates along the Glenn Highway (Segment 12); and (4) Moose Ramp underneath Ship Creek Bridge on the Glenn Highway (Segment 12). The goal is to install secure fencing on Fort Richardson where it is needed, however, as discussed above, there will be certain areas where the fencing will be discontinuous, areas where the fence will have 'gaps' in it. However, when considered along with existing security measures and capabilities, the proposed fencing will greatly enhance installation security and public safety by providing more clear boundary demarcation. Currently, sentry patrols, aerial surveys, and random spot checks are used to provide installation security. These efforts would continue in areas where secure fencing cannot be installed. Below is a more detailed discussion of these so-called 'gaps' in the proposed fencing.

There does not seem to be a way to install a fence that will seal off the railroad tracks on North Post. This is an area where all-terrain vehicles may gain unauthorized access to the installation in summer. In winter, unauthorized snow machines could enter here.

There is no plan to fence Eagle River. In winter when ice has formed over the river, unauthorized snow machines could enter the reservation from urban areas up river. Vehicles or ATVs probably could not enter the reservation here in summer due to the steepness of the terrain near the riverbanks.

Moose gates along the Glenn Highway were installed to provide moose that are trapped in the highway corridor a way to escape. They have not worked well, few moose seem to be able to go through the gates. In some instances, cows have been observed passing through the gates but their calves became trapped in the highway corridor and were unable to follow the cow through. In other instances, mostly during winter, gates freeze and do not allow animal passage or injure animals by impaling them if they try to squeeze through the gate openings (the latter has been observed on Fort Richardson near Ship Creek). The need for increased security and force protection issues renders the incorporation of moose gates into the new fence design infeasible. The State of Alaska Department of Transportation (DOT) initially included the gates as mitigation for the fencing project when it was installed in the early 1980s. With the installation of a continuous security fence it is anticipated that less moose are likely to enter the highway corridor except in those places where animal passages are incorporated into the fence.

The specially designed moose ramp under the Ship Creek Bridge on the Glenn Highway was also a mitigation measure for fencing the Glenn Highway. It was designed to provide moose and other animals with free passage and to allow annual moose migrations across the Glenn Highway. It also has not worked very well as few moose use it to cross under the Glenn Highway. Aerial moose censuses conducted in November often show unusually large numbers of moose concentrated behind the fence on the west side of the Glenn Highway north of Bartlett High School. This strongly indicates that moose are not using the Ship Creek Bridge underpass to cross the Glenn Highway. The new security fence will most likely be installed near the bicycle path along the Glenn Highway right-of-way where the moose fence currently exists. This will preclude blocking the ramp underneath the bridge on the Glenn Highway.

3.2.5 Cultural Factors

The primary impacts to cultural resources under the proposed project could involve, but not be limited to, ground disturbance at identified archaeological sites and visual impacts to historic buildings or districts.

3.2.5.1 Effects on Alternative Actions

3.2.5.1.1 Description of Methodology

Analysis of potential cultural resource impacts is based on the nature of proposed activities, and their potential to affect cultural resources. The following categories will be used in assessing potential impacts:

- No Historic Properties Affected – No historic properties affected implies there are no known or expected historic properties in the area of potential affect of the undertaking.

- No Historic Properties Adversely Affected – No historic properties adversely affected implies that there are known historic properties in the project's area of potential affect but that the proposed undertaking does not impact the qualities of the historic property that makes it eligible for listing in the National Register of Historic Places.

- Historic Properties Adversely Affected – Historic Properties Adversely Affected implies that there are known historic properties in the project's area of potential affect and the proposed undertaking will have an impact on the qualities of the property that makes it eligible for listing in the National Register of Historic Places.

3.2.5.5.2 Cultural Resources Effects on all Alternatives

For all of the other alternatives where ground-disturbing activities will take place, a combination of new and upgrading existing fencing will occur along the boundary of the installation beginning at the northeast boundary where it meets Knik Arm and proceeding southward for a total distance of 33.3 miles. There are no reported or suspected cultural resources in areas where the fencing is proposed. No Historic Properties are affected under any of the alternatives. If cultural resources are located during construction, mitigation measures, including halting excavation or associated construction activity pending notification to the USARAK Cultural Resources Manager would be implemented.

3.2.5.5.3 Cumulative Impact Conclusion on Cultural Resources

Proposed and alternative actions do not occur in the vicinity of known or suspected cultural resources. There are no cumulative affects on cultural resources from these actions.

3.2.6 Visual Resources / Aesthetics

The security fencing along the Glenn Highway will be at a distance from the highway as not to cause negative aesthetic issues. Woody vegetation will re-sprout in the cleared

area for the fence and will provide a partial shielding effect where the fence will blend into the background when viewed from the highway. Eagle Glen and Muldoon subdivisions already have fencing installed along part of the military boundary. New fencing in these areas may result in increasing negative visual impacts due to the change in fence design. The new fence and the retrofitted portions of the existing fence would have eight-foot high chin link with three strands of barbed wire on top. The aesthetic effect of the new security fence will be more pronounced in areas where currently no fencing exists, potentially affecting property values in the area. However, the fact that security fencing would reduce unauthorized access onto Army land could also benefit homeowners who may have experienced noise and other disturbance due to unauthorized users being present on adjacent Army land.

3.2.6.1 Mitigation for Security Fencing along Muldoon and Eagle Glen Subdivisions

The Corps of Engineers is evaluating painting the security fencing to lessen the visual impacts along Muldoon and Eagle Glen subdivisions.

3.2.7 Environmental Justice and Environmental and Safety Risks for Children

3.2.7.1 Environmental Justice

Executive Order No. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* [59 Federal Regulation No. 32], issued in February 1994, provides that "*each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations*". The Proposed Action and its alternatives would be confined to reservations lands, but would be located in places adjacent to private property owners. Construction acquisition actions would comply with federal acquisition regulations. While minority and low-income populations reside in the vicinity of Fort Richardson, the anticipated impacts from the proposed fencing projects, whether from noise or traffic, impacts to wildlife, floral resources, or recreational access, are not anticipated to have significant or disproportionate adverse effects on minority or low-income populations. As discussed in this EA, the nature of anticipated impacts, distance from the project areas, and proposed mitigation efforts combine so that there is not a significant or disproportionate adverse effect on minority or low-income populations.

3.2.7.2 Environmental Health and Safety Risks for Children

Executive Order No. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, [62 Federal Regulation No. 78] was issued in April 1997. This Executive Order directs each federal agency to "*ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks*". Sensitive areas for exposure to children are schools and family housing areas. Environmental health and safety risks are attributable to products that a child might come in contact with or ingest as well as safety around construction areas and fencing. Proposed projects are within the military reservation,

construction and operation of these projects would comply with federal safety standards, and the installation of fencing will minimize unauthorized access to ranges, which could otherwise cause risks to children. Neither the Proposed Action nor its alternatives would have significant or disproportionate adverse effects on children or pose health or safety risks. Installing fencing with appropriate signage should have a positive impact on environmental health and safety for children by reducing intentional and inadvertent access to the military reservation.

3.3 Description of the Possible Environmental Effects of Implementing Alternative 3-(Installing Security Fencing that Provides for Animal Passage)

The environmental effects and impacts of implementing Alternative 3 would be the same as for Alternative 2 for hazardous wastes, physical and land use factors, cultural resources, and visual resources / aesthetics. The only differences would be in biological and ecological factors. More specifically, the small, medium and large sized animal movements and migration problems that would be created by implementing Alternative 2 would be mitigated to a large degree by substituting Alternative 3.

Mitigation to allow passage of small and medium sized animals through the fence would be accomplished after the fence has been constructed by installing appropriate size openings at selected locations in the wire mesh in all areas with the exception of segments near residential areas (Eagle Glen Subdivision and Muldoon in east Anchorage). These areas cannot be comprised for security reasons. Due to much of the natural habitat being removed for residential development, and the potential for human / wildlife conflicts in such areas, it is not as important to provide for small and medium sized animal passage through the fence in these areas.

Mitigation to allow passage of large animals (moose and bears) will be accomplished by installing a pipe rail fence in two of the most important areas where large numbers of migratory moose move across the planned fencing. This mitigation is the 'heart' of Alternative 3. These areas are along the Glenn Highway from the Weigh Station southwest to Camp Denali (Fence Segments 10 and 11) and an area on South Post near South Fork of Campbell Creek (Fence Segments 17 and 18). Installing a pipe rail fence in these two areas where calves and cubs of the year can go under the fence and adult moose and bears can go over the fence will resolve the major problems with allowing large animal passage in the new fencing project. Although moose wander back and forth across the installation boundary in a number of other areas, they are not using established migration routes and fencing in these areas would result in negligible impacts to the animals.

3.4 Description of the Possible Environmental Effects of Implementing Alternative 4- (Installing Security Fencing that Provides for Expanded Animal Passage)

The environmental effects of implementing Alternative 4 would be the same as for Alternatives 2 and 3 above for hazardous wastes, physical and land use factors, cultural resources, and visual resources / aesthetics. The only differences would be in biological

and ecological factors. More specifically, the small, medium, and large sized animal movements and migration problems that would be created by implementing Alternatives 2 and 3 would be mitigated to the fullest extent by substituting Alternative 4.

Instead of cutting holes at random locations to allow passage of small and medium size animals through the fence as allowed in Alternative 3, the entire chain link mesh fence would be raised 20 inches above the ground leaving a gap where small and medium size animals could pass under the fence. The gap could be made in all new security-fencing areas with the exception of where subdivisions were up against the boundary line, e.g., Eagle Glenn Subdivision west of Eagle River and Muldoon in east Anchorage. This would allow for free and unlimited passage for most small animals.

In addition to the pipe rail fences allowed in Alternative 3 along the Glenn Highway (Fence Sections 10 and 11) and South Post (Fence Segments 17 and 18), additional pipe rail fencing would be installed on North Post in fencing Segments 1, 3, and 4. This would allow free movement of the Fort Richardson resident moose on North Post with animals on State of Alaska lands between the Fort Richardson boundary and east to the Glenn Highway. This area is the Fire Creek drainage and is approximately 5,000 acres of native forest. The pipe rail fences installed in this area would insure the gene pool of these moose would not be affected and hunters with permits on State land would have a better opportunity for harvesting moose if both areas were not segregated. Bears would not be affected as there are few if any bears on North Post of Fort Richardson.

3.5 Cumulative Impacts

Cumulative impacts are defined as an effect on the environment that results from incremental impacts of the action when other past, present, and reasonably foreseeable future actions, regardless of what agency or person(s), undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant actions taking place locally over a period of time.

Due to a need for increased security and force protection, the Army will probably be installing security fencing in the future in areas where there are no fencing at present. These areas are along the installation boundary at Arctic Valley near the old Nike Missile site. Other areas where fencing may be required in the future are around the Fort Richardson Cantonment area. The impacts at Arctic Valley would be associated with aesthetics and animal passage through the fence. Impacts on the Cantonment would be associated with animal passage and aesthetic considerations.

4.0 SUMMARY OF EFFECTS

4.1 Wetlands

It is important to implement the recommended mitigation for installation of fencing in wetlands. The mitigation that will reduce impacts and damage to wetlands to the

minimum is installation of the fencing during the winter when the ground and soils are frozen. Galvanized pipe will be pile driven into wetland areas. Rutting and changes in hydrology in the wetlands will almost totally be eliminated during winter installation. In addition, a Clean Water Act Section 404 permit from the Corps of Engineers will not be required if the work is performed when the ground and soils are frozen. The contract will have to clearly state the conditions and timing for installation of fencing in the wetland areas. Most of the fencing will be installed in the June/August timeframe. Fencing in the wetland areas will likely be in the January/March time frame.

4.2 Small, Medium, and Large Sized Animal Passage through the New Fencing

If not mitigated, animal passage through the new security fencing presents a potentially large impact on both small and medium sized and large animals. Mitigation for small and medium sized animal passage would be implemented through the installation of appropriate size openings in the fence at selected locations to allow the passage of these animals. Mitigation for small animal passage is included in Alternatives 3 and 4 in this document. All fencing areas could be accommodated with appropriate size openings by leaving a 20-inch gap at the bottom of the chain link mesh fence with the exception of residential areas at Eagle Glen Subdivision and Muldoon in east Anchorage. These areas require additional security with the chain link mesh being installed at ground level. There is little natural habitat in the residential areas due to clearing native vegetation for housing projects. Installation of the chain link mesh fence at ground level in these areas will result in, at most, minor impacts.

The most challenging issue regarding fencing the installation boundary and the Glenn Highway Corridor is mitigation for large animal crossings, i.e., moose and bears. There are two major moose migration corridors (Weigh Station to Camp Denali along the Glenn Highway and South Post near North Fork of Campbell Creek) that would be impeded with the installation of combination security fencing as discussed in Alternative 2. Two mitigation measures were discussed in the body of this document to reduce the adverse effects of fencing on moose movements and the blockage of migration corridors. One is to feed the moose like the government does for the Yellowstone elk after their traditional winter habitat was lost to development near Jackson Hole, Wyoming. This would be difficult, costly, and may not be practical as supplemental foods developed so far have not been adequate to keep moose alive. The other mitigation measure would be to create additional habitat to make up for the insufficient food resources. Developing new habitat for a large concentration of moose would be a major task requiring considerable funding and with an uncertain outcome. It is not easy to develop new habitat and it often requires years to do so. Besides the lack of effective mitigation for a high-density moose population confined to a small wintering area, the security fencing would impede bear movements and migration. Bear migration from Anchorage along the coastal plain north through Fort Richardson and onward to Eagle River could be impeded. In addition to the large animal problems, training and the use of the Small Arms Ranges could be frequently interrupted during a six-month period in the winter and spring. The mitigation measures described above are neither practical nor feasible and therefore, not recommended. The only other mitigation available and the one most likely to succeed

are to allow for passage of large animals at the two major crossings. This mitigation is the 'heart' of Alternative 3. Adopting this alternative would reduce the environmental impacts to an acceptable level. Alternative 4 goes further to mitigate large animal crossing the new security fencing by expanding the pipe rail fence to other areas on North Post.

Due to large impacts resulting from implementing the preferred alternative (Alternative 2), the installation of combination security fencing that severely restricts animal passage, the Army's proposed action will be Alternative 3. This alternative will allow the security fencing to be constructed in such a manner as to address the small, medium and large sized animal problems and build into the fence suitable animal passages.

5.0 CONCLUSIONS

The proposed action to install security fencing on Fort Richardson was analyzed by comparing potential environmental consequences against existing conditions. Findings indicate that installation of the combination security fencing on the installation boundary and along the Glenn Highway Corridor may have significant environmental impacts due to the alteration (obstruction) of animal movements. Mitigation measures were analyzed for the combination security fence, however, none were considered feasible or actions that the Army would likely commit resources for implementation. Security fencing with chain link wire mesh built from ground level to a height of eight (8) feet would cause substantial impacts to small, medium and large sized animals as it would restrict their normal movements and migration routes.

Adopting Alternative 3 that would allow for small, medium and large sized animal passage would be the best choice to satisfy most of the military requirements and at the same time minimize significant impacts on wildlife. Appropriate size openings will be installed in the fence in selected locations after the fence has been constructed to allow small and medium sized animal passage. A pipe rail fence will be substituted for the combination security fence in two locations where major moose migrations occurs. This will allow moose and bears unrestricted passage through the new fencing. Proceeding with Alternative 3 would not significantly or adversely impact the affected environment.

The Provost Marshal's Office is the proponent for this project and has made a balanced decision on how to proceed with the fencing project by selecting Alternative 3. Major consideration was given to security of the post, environmental impacts on wildlife, and appropriate mitigation measures to reduce impacts to acceptable levels.

In the attempt to weigh its land stewardship obligations with its defense responsibilities, the Army has decided to select an alternative that is less desirable in meeting its security requirements. In doing so, the Army realizes, by accepting the less than optimal security fencing option, it will have to assume a greater burden in developing other force protection actions to compensate for the fence deficiencies.

Due to funding limitations, all of the 33.8 miles of fencing discussed in this document may not be built. Areas with low priority for the construction of security fencing include Segments 1, 2, 9 and 10 on the East side of the Glenn Highway and 13. Another cost saving strategy is to retrofit existing fencing to the new combination security fencing in Segments 4, 5, and 14, and 15.

6.0 DOCUMENT PREPARATION

The person listed below prepared this Environmental Assessment and the accompanying Notice of Availability and Public Comment Period and the Finding of No Significant Impact.

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7.0 ACRONYMS

ADF&G	Alaska Department of Fish and Game
AFB	Air Force Base
AR	Army Regulation
BP	Before Present
CFR	Code of Federal Regulations
dB	decibel
DNL	day-night average sound level
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
F	Fahrenheit
FNSI	Finding of No Significant Impact
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLT	No Later Than
NOA	Notice of Availability
NRHP	National Register of Historic Places
ORV	Off-road Vehicle
USARAK	United States Army Alaska
USC	United States Code